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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,411	02/05/2004	Hideyasu Takatsuji	43888-294	3846

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MCDERMOTT, WILL & EMERY  
600 13th Street, N.W.  
WASHINGTON, DC 20005-3096

EXAMINER
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MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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03/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/771,411	<b>Applicant(s)</b> TAKATSUJI ET AL.	
	<b>Examiner</b> JULIAN MERCADO	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 30, 2008 has been entered.

Claims 1-3 are pending.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 has been amended to recite that the lithium-containing composite oxide has a structure of lithium cobaltate.... Applicant's citation to the specification is acknowledged, however, upon review, there appears to be no portion of the disclosure drawn to this feature. At best, the specification on page 4 discloses that "[i]n the lithium ion secondary battery of the

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present invention, Co constituting a crystal structure of the lithium- containing composite oxide as the positive electrode active material is partially substituted by Na atoms and K atoms....”

There is no disclosure of "a structure of lithium cobaltate" or anything drawn to a lithium cobaltate structure *per se*, but instead only a broad disclosure of some type of crystal structure for a lithium-containing composite oxide. The examiner further notes that the specification is silent on any specific type of crystal structure.

Claims 2 and 3 are rejected under 35 U.S.C. 112, first paragraph, as being dependent upon a rejected base claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 has been amended to recite that the lithium-containing composite oxide has a structure of lithium cobaltate.... The claimed structure of lithium cobaltate is deemed indefinite, given that the specification merely discloses a crystal structure for a lithium-containing composite oxide. Accordingly, the claims have been given their broadest reasonable interpretation in a manner consistent with the disclosure.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph as being dependent upon a rejected base claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kweon et al. (U.S. Pat. 6,783,890 B2) in view of Okamura et al. (JP 06 –150929).

The rejection is maintained for the reasons of record. Notwithstanding the 35 U.S.C. 112, first and second paragraph rejections (discussion above), the examiner notes the amendment to claim 1 now reciting that the lithium-containing composite oxide has a structure of lithium cobaltate where Co atoms are partially substituted by Na and/or K atoms. While Kweon et al. does not explicitly teach this feature, Okamura et al. teaches addition of Na or K in substitution for Li in a composite oxide material. The skilled artisan would find obvious to modify Kweon et al.'s invention by substituting Na or K in the composite oxide material. The motivation for such a modification is to improve the battery's cycle time properties. See the Abstract of Kweon et al.

(new rejection)

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kweon et al. (U.S. Pat. 6,783,890 B2) in view of Okamura et al. (JP 06 –150929), and further in view of Yoon et al. (U.S. Pat. 6,482,547 B1).

The teachings of Kweon et al. and Okamura et al. are discussed above.

Kweon et al. does not explicitly teach a composite material for the negative electrode comprising a core graphite particle covered in part by amorphous carbon. However, Yoon et al. teaches a crystalline graphite core with an amorphous carbon shell. See the Abstract and col. 4 line 6 et seq. The skilled artisan would find obvious to further modify Kweon et al. by employing a crystalline graphite core with an amorphous carbon shell. The motivation for such a modification is to improve the battery's packing density, voltage characteristics and charge-discharge efficiency, *inter alia*. See col. 2 line 51 et seq.

### ***Response to Arguments***

Applicant's arguments filed with the present amendment have been fully considered but they are not persuasive. Applicant's assertion of unexpected results, based on Tables 3 and 4 and Examples 1-14 as compared to Comparative Examples 7 and 9, are noted. This assertion of unexpected results, however, has been considered by the examiner in a prior Office action; the portion of the July 30, 2007 Office action starting on page 2 last paragraph to page 4 (including the attached Figure 2) is herein incorporated by reference. The examiner notes that the position set forth therein remains uncontested.

### ***Double Patenting***

Claims 1 and 2 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 7,150,942 B2 to Okochi et al. in view of Okamura et al. (JP 06-150929). This rejection is maintained for the reasons of record.

Claim 3 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 7,150,942 B2 to Okochi et al. in view of Okamura et al. (JP 06 -150929) and Yoon et al. (U.S. Pat. 6,482,547 B1). Claim 3 would have been obvious to the skilled artisan in order to improve the battery's packing density, voltage characteristics and charge-discharge efficiency, *inter alia*. See Yoon et al. in col. 2 line 51 et seq.

The examiner notes that no arguments were submitted for the obviousness-type double patenting rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/J. M./

Examiner, Art Unit 1795

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795